

Table B-2. Survey of Industrial Research and Development---relative standard error for survey estimates, by industry and by size of company: 1999

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Industry and size of company	NAICS codes	Number of R&D-performing companies	Domestic of R&D performers	Domestic employment of R&D performers	Number of FTE scientists and engineers	Total R&D	Company and other funds R&D	Company-financed R&D performed outside of U.S.	Company-financed R&D contracted to outside organizations	Federal funds R&D	Total funds for basic research	Total funds for applied research	Total funds for development
[Percent]													
Distribution by industry:													
All industries.....	21-23, 31-33, 42, 44-81	3,671	16.2	20.9	2.2	2.4	2.7	0.4	12.1	1.5	3.6	1.8	4.2
Manufacturing.....	31-33	1,982	2.6	1.8	2.4	2.1	2.4	0.4	2.8	0.9	2.2	1.3	3.8
Food.....	311	90	3.3	6.4	4.4	2.2	2.2	0.0	20.8	0.0	17.4	3.5	2.3
Beverage and tobacco products.....	312	6	1.6	2.1	1.7	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.8
Textiles, apparel, and leather.....	313-16	79	8.1	8.2	73.8	3.9	3.9	0.1	45.9	0.0	17.0	9.3	4.4
Wood products.....	321	38	10.2	9.1	8.7	8.3	8.3	0.0	6.4	34.8	6.6	11.7	14.2
Paper, printing and support activities.....	322, 323	53	4.5	4.8	1.7	0.9	0.9	0.0	0.7	0.0	7.1	1.1	2.5
Petroleum and coal products.....	324	12	0.7	3.4	19.4	4.9	4.9	0.0	0.0	0.0	24.6	6.1	3.3
Chemicals.....	325	228	2.2	4.3	1.7	0.8	0.8	0.3	0.3	0.1	0.4	0.9	1.2
Basic chemicals.....	3251	101	4.5	12.8	0.5	0.5	0.5	0.9	10.9	0.2	0.4	0.4	1.5
Resin, synthetic rubber, fibers, and filament.....	3252	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pharmaceuticals and medicines.....	3254	49	2.0	4.6	2.6	1.2	1.2	0.4	0.0	0.0	0.0	0.0	1.6
Other chemicals.....	325 (minus 3251-52, 3254)	64	6.4	7.6	5.0	2.7	2.8	3.3	12.2	0.0	7.0	5.6	3.1
Plastics and rubber products.....	326	161	7.2	5.8	12.0	9.3	9.3	3.9	4.8	0.0	13.9	23.0	8.4
Nonmetallic mineral products.....	327	26	22.4	32.2	3.1	2.9	2.9	0.0	75.9	0.0	3.4	4.4	3.4
Primary metals.....	331	54	6.2	6.7	3.9	4.1	4.1	10.4	1.3	5.8	3.2	7.3	9.4
Fabricated metal products.....	332	170	3.9	4.1	6.1	3.3	2.9	0.5	29.2	48.1	10.0	9.0	5.9
Machinery.....	333	219	6.0	9.0	9.4	2.7	2.8	1.1	5.1	12.2	16.9	4.8	3.6
Computer and electronic products.....	334	353	2.0	2.8	1.5	1.1	1.2	0.3	7.8	2.0	10.9	2.2	2.1
Computers and peripheral equipment.....	3341	51	1.8	3.5	4.5	2.5	2.5	0.0	18.2	0.0	6.2	0.6	7.2
Communications equipment.....	3342	66	3.0	5.4	3.5	3.5	3.6	0.1	0.0	0.0	23.4	20.1	7.7
Semiconductor and other electronic components.....	3344	110	2.9	6.6	2.4	1.6	1.5	1.5	19.0	66.1	4.2	2.6	2.8
Navigational, measuring, electromedical, and control instruments.....	3345	106	2.4	3.4	1.2	1.0	1.1	0.2	16.2	1.9	2.6	5.3	3.0
Other computer and electronic products.....	334 (minus 3341-42, 3344-45)	20	40.4	37.9	36.6	26.0	26.0	0.0	0.0	0.0	82.5	21.2	15.0

See explanatory information and SOURCE at end of table.

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[Percent]													
Distribution by industry:													
Electrical equipment, appliances, and components.....	335	103	2.1	3.6	6.2	1.4	1.5	9.4	2.1	2.5	7.8	2.2	1.6
Transportation equipment.....	336	94	9.5	5.7	5.9	5.5	7.8	0.1	0.1	0.6	2.3	3.5	8.6
Motor vehicles, trailers, and parts.....	3361-63	41	12.7	10.4	10.8	10.2	10.3	0.0	0.1	0.7	11.8	5.7	16.4
Aerospace products and parts.....	3364	24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other transportation equipment.....	336 (minus 3361-64)	29	3.9	4.1	5.9	5.2	6.3	21.9	14.3	8.0	30.4	12.8	2.2
Furniture and related products.....	337	41	6.6	9.0	7.2	6.4	6.4	0.0	87.3	0.0	38.4	23.0	5.4
Miscellaneous manufacturing.....	339	160	2.8	2.9	4.4	2.1	2.0	0.8	29.4	62.5	20.5	10.5	2.2
Medical equipment and supplies.....	3391	77	2.3	3.4	5.4	2.3	2.2	0.9	16.9	63.0	28.0	15.1	2.3
Other miscellaneous manufacturing.....	339 (minus 3391)	83	6.3	5.1	7.0	4.6	4.6	0.5	52.3	0.0	27.9	6.0	5.7
Other manufacturing ¹	31-33 (minus 311-16, 321-27, 331-37, 339)	--	--	--	--	--	--	--	--	--	--	--	--
Small manufacturing companies ²	Fewer than 50 employees	95	13.6	12.8	22.7	48.2	49.2	99.5	62.4	58.5	24.0	26.9	59.4
Nonmanufacturing.....	21-23, 42, 44-81	1,689	34.7	39.8	3.9	5.6	6.0	1.1	21.5	5.4	7.9	4.5	8.2
Mining, extraction, and support activities.....	21	21	37.1	54.0	38.5	73.8	73.8	76.9	0.0	0.0	0.0	34.3	80.5
Utilities.....	22	41	6.8	7.5	10.7	10.5	11.6	0.0	7.2	11.1	5.9	44.3	5.2
Construction.....	23	19	26.4	20.6	52.6	53.3	53.4	0.0	0.0	0.0	40.1	17.7	61.7
Trade.....	42, 44, 45	156	10.6	10.1	9.6	7.2	7.2	0.3	4.2	26.8	13.6	13.9	8.1
Transportation and warehousing.....	48, 49	15	21.4	15.1	39.6	18.4	18.4	0.0	20.2	0.0	9.2	80.6	47.7
Information.....	51	289	16.4	15.6	4.1	3.3	3.5	0.3	7.6	3.6	33.4	5.0	2.8
Publishing.....	511	238	3.2	4.5	2.9	2.2	2.2	0.7	19.9	26.8	10.3	7.1	3.3
Newspaper, periodical, book, and database.....	5111	10	7.7	11.6	36.4	26.4	26.4	0.0	0.0	0.0	0.0	70.0	23.4
Software.....	5112	228	3.5	2.5	2.5	2.1	2.1	0.7	20.1	26.8	10.5	6.4	3.3
Broadcasting and telecommunications.....	513	19	22.0	22.5	11.3	16.5	21.5	0.0	0.0	2.9	3.0	0.7	0.3

See explanatory information and SOURCE at end of table.

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[Percent]													
Distribution by industry:													
Radio and television broadcasting.....	5131	3	0.5	3.6	1.0	0.4	1.3	0.0	0.0	0.0	24.3	0.0	0.0
Telecommunications.....	5133	12	22.6	23.6	17.3	20.5	23.5	0.0	0.0	0.0	0.0	0.0	0.0
Other broadcasting and telecommunications.....	513 (minus 5131, 5133)	4	40.3	50.0	41.2	41.0	21.9	0.0	92.1	94.4	92.1	62.9	17.7
Other information.....	51 (minus 511, 513)	32	7.3	5.1	19.8	14.7	14.9	0.0	16.2	0.0	94.1	9.2	7.5
Finance, insurance, and real estate.....	52, 53	48	10.4	13.7	6.3	9.9	9.9	0.0	26.5	0.0	11.1	2.9	10.7
Professional, scientific, and technical services.....	54	966	4.0	2.7	2.7	4.8	6.1	5.6	5.8	4.9	5.7	4.6	9.1
Architectural, engineering, and related services.....	5413	164	11.8	7.2	6.1	23.1	33.7	0.7	48.4	12.0	28.9	21.2	42.6
Computer systems design and related services.....	5415	393	4.0	2.5	3.7	4.0	3.9	10.5	20.3	20.7	13.9	6.6	4.7
Scientific R&D services.....	5417	375	3.6	2.3	2.7	2.5	2.6	8.8	5.9	5.2	5.8	4.3	3.4
Other professional, scientific, and technical services.....	54 (minus 5413, 5415, 5417)	34	6.7	7.3	29.5	41.6	43.2	0.0	0.0	0.0	31.8	67.1	39.8
Management of companies and enterprises.....	55	9	20.1	27.6	54.3	68.2	68.9	25.8	0.0	0.0	42.4	0.0	83.2
Health care services.....	621-23	13	4.4	8.3	16.7	7.7	7.8	0.0	0.0	21.5	71.1	44.5	78.5
Other nonmanufacturing.....	56, 61, 624, 71, 72, 81	68	93.6	85.9	8.5	17.6	17.9	2.1	17.0	0.0	74.6	32.7	9.4
Small nonmanufacturing companies ²	Fewer than 15 employees	44	56.2	54.9	26.9	51.1	53.3	0.0	99.0	83.1	49.5	60.5	55.8

See explanatory information and SOURCE at end of table.

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Distribution by size of company: [Number of employees]		[Percent]											
Total.....		3,671	16.2	20.9	2.2	2.4	2.7	0.4	12.1	1.5	3.6	1.8	4.2
5 to 24.....		258	13.4	9.5	15.6	37.5	40.9	32.7	90.7	34.5	21.7	24.0	46.8
25 to 49.....		289	12.6	10.0	13.8	18.6	19.9	49.9	24.1	24.7	16.6	16.5	28.3
50 to 99.....		401	10.9	9.8	21.2	22.4	24.4	27.5	34.8	23.8	14.1	14.8	31.5
100 to 249.....		571	9.1	8.3	6.6	6.5	6.8	11.4	26.3	20.8	12.3	15.0	7.2
250 to 499.....		416	19.6	20.3	10.1	22.5	24.0	23.4	10.7	6.2	32.6	7.6	32.1
500 to 999.....		444	11.4	10.4	8.6	4.5	4.8	0.7	7.7	10.0	11.8	5.8	4.8
1,000 to 4,999.....		744	13.5	10.2	9.1	9.3	9.6	0.3	7.5	12.1	1.3	4.0	12.6
5,000 to 9,999.....		256	3.1	5.0	0.3	0.1	0.1	0.0	1.5	0.1	0.2	0.5	0.1
10,000 to 24,999.....		179	2.0	5.5	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2
25,000 or more.....		112	0.9	9.0	0.5	0.4	0.5	0.1	0.0	0.0	4.9	0.0	0.1

¹ "Other manufacturing" is intentionally left blank to allow for possible future North American Industry Classification System (NAICS) expansion.

² The frame from which the statistical sample was selected was divided into two partitions based on total company employment. In the manufacturing sector, companies with employment of 50 or more were included in the large company partition. In the nonmanufacturing sector, companies with employment of 15 or more were included in the large company partition. Companies in the respective sectors with employment below these values, but with at least 5 employees, were included in the small company partition. The purpose of partitioning the sample this way was to reduce the variability in industry estimates largely attributed to the random year-to-year selection of small companies by industry and the high sampling weights that sometimes were assigned to them. Because of this, detailed industry statistics were possible only from the large company partition; detailed industry statistics from the small company partition were not possible. Statistics from the small company partition are shown separately and are included in manufacturing, nonmanufacturing, and all industries totals. For more detailed information, please see "frame creation" and "sample selection" in Section B.

KEY: -- = Indicates data not collected.

NOTES: Starting with the 1999 survey, estimates are based on the North American Industry Classification System (NAICS). In prior years, estimates were based on the Standard Industrial Classification (SIC) system.

A description of the standard error of estimate is given in section A under "Survey Methodology". The percentage (or relative) standard errors in this table may be converted to standard errors of estimate by multiplying the percentages shown by the associated estimates. For example, the relative standard error of estimate for company-funded R&D performance by the wood products industry (NAICS 321) is shown as 8.3 percent, and the associated company-funded R&D estimate for this industry is shown as \$70 million in Table A-7. The standard error of estimate is 0.083 times 70 or 5.8.

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Industrial Research and Development: 1999